

flight that is critical from the standpoint of oxygen need and that after the failure the airplane will descend, without exceeding its normal operating limitations, to flight altitudes allowing safe flight with respect to terrain clearance.

[Doc. No. 6258, 29 FR 19205, Dec. 31, 1964, as amended by Amdt. 121–132, 41 FR 55475, Dec. 20, 1976]

§ 121.333 Supplemental oxygen for emergency descent and for first aid; turbine engine powered airplanes with pressurized cabins.

(a) *General.* When operating a turbine engine powered airplane with a pressurized cabin, the certificate holder shall furnish oxygen and dispensing equipment to comply with paragraphs (b) through (e) of this section in the event of cabin pressurization failure.

(b) *Crewmembers.* When operating at flight altitudes above 10,000 feet, the certificate holder shall supply enough oxygen to comply with § 121.329, but not less than a two-hour supply for each flight crewmember on flight deck duty. The required two hours supply is that quantity of oxygen necessary for a constant rate of descent from the airplane's maximum certificated operating altitude to 10,000 feet in ten minutes and followed by 110 minutes at 10,000 feet. The oxygen required in the event of cabin pressurization failure by § 121.337 may be included in determining the supply required for flight crewmembers on flight deck duty.

(c) *Use of oxygen masks by flight crewmembers.* (1) When operating at flight altitudes above flight level 250, each flight crewmember on flight deck duty must be provided with an oxygen mask so designed that it can be rapidly placed on his face from its ready position, properly secured, sealed, and supplying oxygen upon demand; and so designed that after being placed on the face it does not prevent immediate communication between the flight crewmember and other crewmembers over the airplane intercommunication system. When it is not being used at flight altitudes above flight level 250, the oxygen mask must be kept in condition for ready use and located so as to be within the immediate reach of

the flight crewmember while at his duty station.

(2) When operating at flight altitudes above flight level 250, one pilot at the controls of the airplane shall at all times wear and use an oxygen mask secured, sealed, and supplying oxygen, in accordance with the following:

(i) The one pilot need not wear and use an oxygen mask at or below the following flight levels if each flight crewmember on flight deck duty has a quick-donning type of oxygen mask that the certificate holder has shown can be placed on the face from its ready position, properly secured, sealed, and supplying oxygen upon demand, with one hand and within five seconds:

(A) For airplanes having a passenger seat configuration of more than 30 seats, excluding any required crewmember seat, or a payload capacity of more than 7,500 pounds, at or below flight level 410.

(B) For airplanes having a passenger seat configuration of less than 31 seats, excluding any required crewmember seat, and a payload capacity of 7,500 pounds or less, at or below flight level 350.

(ii) Whenever a quick-donning type of oxygen mask is to be used under this section, the certificate holder shall also show that the mask can be put on without disturbing eye glasses and without delaying the flight crewmember from proceeding with his assigned emergency duties. The oxygen mask after being put on must not prevent immediate communication between the flight crewmember and other crewmembers over the airplane intercommunication system.

(3) Notwithstanding paragraph (c)(2) of this section, if for any reason at any time it is necessary for one pilot to leave his station at the controls of the airplane when operating at flight altitudes above flight level 250, the remaining pilot at the controls shall put on and use his oxygen mask until the other pilot has returned to his duty station.

(4) Before the takeoff of a flight, each flight crewmember shall personally preflight his oxygen equipment to insure that the oxygen mask is functioning, fitted properly, and connected

to appropriate supply terminals, and that the oxygen supply and pressure are adequate for use.

(d) *Use of portable oxygen equipment by cabin attendants.* After November 28, 2005 each mask used for portable oxygen equipment must be connected to its oxygen supply. Above flight level 250, one of the following is required:

(1) Each attendant shall carry portable oxygen equipment with a 15 minute supply of oxygen; or

(2) There must be sufficient portable oxygen equipment (including masks and spare outlets) distributed throughout the cabin so that such equipment is immediately available to each attendant, regardless of their location in the cabin; or

(3) There are sufficient spare outlets and masks distributed throughout the cabin to ensure immediate availability of oxygen to each cabin attendant, regardless of their location in the cabin.

(e) *Passenger cabin occupants.* When the airplane is operating at flight altitudes above 10,000 feet, the following supply of oxygen must be provided for the use of passenger cabin occupants:

(1) When an airplane certificated to operate at flight altitudes up to and including flight level 250, can at any point along the route to be flown, descend safely to a flight altitude of 14,000 feet or less within four minutes, oxygen must be available at the rate prescribed by this part for a 30-minute period for at least 10 percent of the passenger cabin occupants.

(2) When an airplane is operated at flight altitudes up to and including flight level 250 and cannot descend safely to a flight altitude of 14,000 feet within four minutes, or when an airplane is operated at flight altitudes above flight level 250, oxygen must be available at the rate prescribed by this part for not less than 10 percent of the passenger cabin occupants for the entire flight after cabin depressurization, at cabin pressure altitudes above 10,000 feet up to and including 14,000 feet and, as applicable, to allow compliance with § 121.329(c) (2) and (3), except that there must be not less than a 10-minute supply for the passenger cabin occupants.

(3) For first-aid treatment of occupants who for physiological reasons might require undiluted oxygen fol-

lowing descent from cabin pressure altitudes above flight level 250, a supply of oxygen in accordance with the requirements of § 25.1443(d) must be provided for two percent of the occupants for the entire flight after cabin depressurization at cabin pressure altitudes above 8,000 feet, but in no case to less than one person. An appropriate number of acceptable dispensing units, but in no case less than two, must be provided, with a means for the cabin attendants to use this supply.

(f) *Passenger briefing.* Before flight is conducted above flight level 250, a crewmember shall instruct the passengers on the necessity of using oxygen in the event of cabin depressurization and shall point out to them the location and demonstrate the use of the oxygen-dispensing equipment.

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§ 121.335 Equipment standards.

(a) *Reciprocating engine powered airplanes.* The oxygen apparatus, the minimum rates of oxygen flow, and the supply of oxygen necessary to comply with § 121.327 must meet the standards established in section 4b.651 of the Civil Air Regulations as in effect on July 20, 1950, except that if the certificate holder shows full compliance with those standards to be impracticable, the Administrator may authorize any change in those standards that he finds will provide an equivalent level of safety.

(b) *Turbine engine powered airplanes.* The oxygen apparatus, the minimum rate of oxygen flow, and the supply of oxygen necessary to comply with §§ 121.329 and 121.333 must meet the standards established in section 4b.651 of the Civil Air Regulations as in effect on September 1, 1958, except that if the certificate holder shows full compliance with those standards to be impracticable, the Administrator may authorize any changes in those standards that he finds will provide an equivalent level of safety.